

Case 2361

***Strongylopus* Tschudi, 1838 (Amphibia, Anura): proposed designation of *Rana fasciata* Smith, 1849 as the type species**

Alain Dubois

Laboratoire des Reptiles et Amphibiens, Muséum National d'Histoire Naturelle, 25 rue Cuvier, 75005 Paris, France

Abstract. The purpose of this application is to designate *Rana fasciata* Smith, 1849 as the type species of the nominal genus *Strongylopus* Tschudi, 1838 in accordance with current universal understanding and usage. The genus was based on another taxonomic species of which the name, *Rana fasciata* Burchell, 1824, has been suppressed (Opinion 713, November 1964). This latter name has been generally considered to be a synonym of *Strongylopus grayii* (Smith, 1849). Species of frog included in the genus *Strongylopus* (family RANIDAE) are found in uplands in South Africa northward to Tanzania.

Keywords. Nomenclature; taxonomy; Amphibia; Anura; RANIDAE; frogs; *Strongylopus*; *Strongylopus fasciatus*; *Strongylopus grayii*; Southern Africa; East Africa.

1. For a long time the generic name *Strongylopus* Tschudi, 1838 was submerged as a subjective synonym of *Rana* Linnaeus, 1758. It was resurrected by Van Dijk (1966, p. 252) and since then has been used by a number of authors as a valid generic name (see Van Dijk, 1971, 1972; Channing & Van Dijk, 1976, p. 25, fig. 16; Channing, 1979, 1981, 1986; Frost, 1985, pp. 522–523; Poynton & Broadley, 1985; Duellman & Trueb, 1986, p. 546) or subgeneric name (see Clarke, 1981, pp. 325, 326; Dubois, 1981a, p. 929; 1981b, pp. 233, 235; 1987a). A few authors (Passmore & Carruthers, 1979, p. 128; Wager, 1986, pp. 43, 70–72) have continued to regard it as a synonym of *Rana*, but it is likely that the name will remain in use. At present six taxonomic species are recognised (see Channing, 1981).

2. The name *Strongylopus* was proposed by Tschudi (1838, pp. 38, 78–79) for a single nominal species, *Rana fasciata* 'Boie'. In his use of the name, Boie (1832, p. 186) referred to *Rana fasciata* Burchell (1824, p. 32), the earliest use of the specific name. Burchell described the taxon as having a small, short body and as 'a very pretty and new species of frog of a green color, and marked by a longitudinal yellow stripe on its back, and by transverse stripes of brown on its hind legs'. Boie used the name *fasciata* for specimens in the Natuurhistorisch Museum in Leiden which were among those subsequently studied by Tschudi. No specimens or illustrations of *fasciata* attributable to Burchell are known to exist.

3. Duméril & Bibron (1841, p. 389) included *Strongylopus* Tschudi as a synonym of *Rana* Linnaeus. They included a nominal species *fasciatus* 'Boie' and described four varieties, based on material in the Muséum d'Histoire Naturelle in Paris. In describing variety 'D' (p. 391) they noted: 'Nous lui conservons le nom par lequel feu Boie avait désigné dans le musée de Leyde des sujets appartenant sans doute à notre

quatrième variété, nom sous lequel l'espèce été citée par M. Tschudi comme type d'un genre particulier, qu'il a appelé *Strongylopus*'. In the Atlas to their work (1854, pl. 86, fig. 3; not fig. 2 as given by Parker & Ride, BZN 19: 291, September 1962), Duméril & Bibron figured the open mouth of 'Strongylope à bandes'. It was later shown (see Parker & Ride, BZN 19: 291) that Duméril & Bibron's material included two taxonomic species.

4. Andrew Smith (1849; see Waterhouse, 1880, p. 490 for the date of publication) included several species in *Rana*, among them *fasciata* 'Boie' (pl. 78, text, figs. 1, 1a-1c) and a new nominal species, *grayii* (pl. 78, text, figs. 2, 2a-2c). The incorrect spelling *grayi* has been used for the latter species by nearly all subsequent authors, as noted by Comrie Greig, Boycott & Villiers (1979, p. 25). In describing *fasciata*, Smith noted that this was the species placed in *Strongylopus* by Tschudi. His fig. 1 accords with the colour pattern of Duméril & Bibron's variety 'D', and his fig. 2b of the open mouth of *Rana grayii* accords with that figured by Duméril & Bibron as 'Strongylope à bandes'. In describing *grayii*, Smith noted: 'It has, I believe, been considered by Duméril & Bibron as a variety of *Rana fasciata*, but I cannot regard it as such'. Smith's species, *fasciata* and *grayii*, were the same two species represented by variety 'D' and 'Strongylope à bandes' respectively in Duméril & Bibron's material in Paris. Smith described *R. fasciata* as having the 'upper surface of the head and back anteriorly light rusty wood-brown ... six longitudinal stripes on the back and sides ... a stripe along the anterior part of leg close to the body, and two others, or a few spots only, on the parts towards the toes ... body long, rather slender, and very narrow immediately in front of the hinder extremities'. He described *R. grayii* as having 'two or more narrow transverse bars on anterior of fore legs, three on the outer side of the thighs, three towards the posterior side of the leg, and two or more on the outer side of the tarsus ... body short and moderately robust'. Since 1849 all authors have consistently used the names *fasciata* and *grayii* as Smith defined them.

5. Günther (1859, p. 20), adopting *Rana* as the generic name, recorded the name *fasciata* used by Boie (1832), Tschudi (1838), Duméril & Bibron (1841) and Smith (1849) as representing the same species. Fitzinger (1860, p. 414) and Steindachner ([1867], pp. 21-22) both adopted the name *Strongylopus*; Fitzinger recorded the use of *fasciata* by Boie, Tschudi and Duméril & Bibron as synonymous, while Steindachner noted the use of the name by Tschudi, Duméril & Bibron and Smith as referring to the same taxon. Parker & Ride (BZN 19: 291), however, pointed out that the specimens in Leiden seen by Tschudi included the same two species as are represented in Duméril & Bibron's Paris material and that those specimens collected by Boie and recorded by him as *fasciata* Burchell belonged to the taxon later called *grayii* by Smith. Recognition that Smith's name *grayii* related to the species called *fasciata* by Burchell (1824) meant that *fasciata* was the valid name for that taxon, and that the species universally called *fasciata* would require a new name. An application by Parker & Ride (BZN 19: 290-292; September 1962) sought to avoid a transfer of names, which would have resulted in confusion, and to maintain nomenclatural stability by designating one of Smith's specimens of *fasciata* as the neotype of *Rana fasciata* Burchell, 1824. Prof Hobart M. Smith and Prof J.C. Poynton (BZN 20: 254, 255; July 1963) supported the conservation of the name *Rana fasciata* in its currently accepted usage, but the former was opposed to crediting authorship to Burchell, who had not used the name in this sense. In Opinion 713 (November 1964) all uses of

fasciata (as published in combination with *Rana*) prior to that by Smith (1849) were suppressed for both priority and homonymy, and a lectotype (catalogue no. BM(NH) 58.11.25.127 in the Natural History Museum, London) for Smith's nominal taxon *R. fasciata* was designated. This specimen had been proposed by Parker & Ride as a neotype for *Rana fasciata* Burchell, 1824 but this latter course did not receive the necessary approval by the Commission (the implication in Opinion 713 that a neotype designation for *fasciata* Burchell had been confirmed is an error).

6. Opinion 713 has the result that *fasciata* is not the valid name for the taxonomic species on which *Strongylopus* was based. At the time of Parker & Ride's application *Strongylopus* was considered to be a synonym of *Rana* and this was therefore of little consequence (para. 13 on BZN 19: 292 and para. 1 above). The valid name for the type species of *Strongylopus* has been taken to be *Rana grayii* Smith, a subjective synonym of the suppressed *fasciata* Burchell. However, it might be confusing for future workers to have a nominal species *S. fasciatus* (Smith) included in the genus and yet have *grayii* as the valid name of the type species *Rana fasciata* Burchell, 1824 (even though this course would not require Commission action). Moreover, Comrie Greig, Boycott & Villiers (1979, p. 28) suggested that *fasciata* Burchell is a synonym of *Rana fuscigula* Duméril & Bibron, 1841 (p. 386) and not of *grayii* Smith. Fitzinger (1843, p. 31), Van Dijk (1966, p. 252), Comrie Greig et al. (1979, p. 24) and Frost (1985, p. 522) cited '*Rana fasciata*' as the type and it is desirable to maintain continuity by following previous authors. *Rana grayii* and *R. fasciata*, both of Smith (1849), are closely related species and any genus-group taxon containing one of them is bound to contain the other. The specific name of *R. grayii* was placed on the Official List in Opinion 713 and is defined by the lectotype designated by Parker & Ride (1962; BZN 19: 292), a female specimen (catalogue no. BM(NH) 58.11.25.138 in the Natural History Museum, London) collected by Smith from the 'Cape'.

7. In a previous publication (Dubois, 1987b) I mentioned (p. 72) three options: (A) taking the name *fasciata* from Duméril & Bibron (1841); (B) designating *R. grayii* Smith, 1849 as the type species of *Strongylopus*; and (C) designating *R. fasciata* Smith, 1849 as the type species. The third course, which I now propose, does not involve any modification to Opinion 713. It maintains a nominal species *R. fasciata* as the type species and, at the same time, provides continuity in the usage of the name *Strongylopus fasciatus* for a particular taxonomic species.

8. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary powers to set aside all previous fixations of type species for the nominal genus *Strongylopus* Tschudi, 1838 and to designate *Rana fasciata* Smith, 1849 as the type species;
- (2) to place on the Official List of Generic Names in Zoology the name *Strongylopus* Tschudi, 1838 (gender: masculine), type species by designation in (1) above *Rana fasciata* Smith, 1849;
- (3) to add to the entry on the Official List of Specific Names in Zoology for the name *fasciata* Smith, 1849, as published in the binomen *Rana fasciata* and as defined by the lectotype designated in Opinion 713 (November 1964), an endorsement that it is the specific name of the type species of *Strongylopus* Tschudi, 1838.

References

- Boie, H. 1832. *Briefe von Heinrich Boie; geschrieben aus Ostindien und der Reise dahin*. 154 pp. Königlichem Taubstummen Institut, Schleswig.
- Burchell, W.J. 1824. *Travels in the interior of Southern Africa*, vol. 2. 648 pp., 10 pls. Longman, Hurst, Rees, Orme, Brown & Green, London.
- Channing, A. 1979. Ecological and systematic relationships of *Rana* and *Strongylopus* in southern Natal (Amphibia: Anura). *Annals of the Natal Museum*, **23**(3): 797–831.
- Channing, A. 1981. Southern origin of the African genus *Strongylopus* Tschudi, 1838 (Amphibia Ranidae). *Monitore Zoologico Italiano*, N.S. Supplement **15**: 333–336.
- Channing, A. 1986. A new species of the genus *Strongylopus* Tschudi from Namaqualand, Cape Province, South Africa (Anura: Ranidae). *Annals of the Cape Provincial Museums (Natural History)*, **16**(5): 127–135.
- Channing, A. & Van Dijk, D.E. 1976. *A guide to the frogs of South West Africa*. 47 pp. Westville Press, Durban.
- Clarke, B.T. 1981. Comparative osteology and evolutionary relationships in the African Raninae (Anura Ranidae). *Monitore Zoologico Italiano*, (2)**15**, Supplement: 285–331.
- Comrie Greig, J., Boycott, R.C. & Villiers, A.L. de. 1979. Notes on the elevation of *Rana fasciata montana* FitzSimons, 1946 to specific rank and on the identity of *Rana fasciata* sensu Burchell, 1824 (Anura: Ranidae). *Annals of the Cape Provincial Museums (Natural History)*, **13**(1): 1–30.
- Dubois, A. 1981a. Deux noms d'espèces préoccupés dans le genre *Rana* (Amphibiens, Anoures). *Bulletin du Muséum National d'Histoire Naturelle*, (4)**2**(A, 3): 927–931.
- Dubois, A. 1981b. Liste des genres et sous-genres nominaux de Ranoidea (Amphibiens Anoures) du monde, avec identification de leurs espèces-types: conséquences nomenclaturales. *Monitore Zoologico Italiano*, (2)**15**, Supplement: 225–284.
- Dubois, A. 1987a. Miscellanea taxinomica batrachologica (1). *Alytes*, **5**: 7–95.
- Dubois, A. 1987b. *Strongylopus* Tschudi, 1838 (Amphibia, Anura): request for the designation under the plenary powers of a type species in agreement with current usage. *Alytes*, **6**(1–2): 69–74.
- Duellman, W.E. & Trueb, L. 1986. *Biology of amphibians*. xvii, 670 pp. McGraw-Hill, New York.
- Duméril, A.-M.-C. & Bibron, G. 1841, 1854. *Erpétologie générale ou histoire naturelle complète des reptiles*, vol. 8. vii, 792 pp. (1841); Atlas. 24 pp., 108 pls. (1854).
- Fitzinger, L.J. 1843. *Systema Reptilium*. Fasciculus primus (Amblyglossae). 106, vi pp. Braumüller & Seidel, Vindobonae.
- Fitzinger, L.J. 1860. Die Ausbeute der österreichischen Naturforscher an Säugethieren und Reptilien während der Weltumsegelung Sr. Majestät Fregatte Novara. *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften Wien*, **42**(24): 383–416.
- Frost, D.R. (Ed.). 1985. *Amphibian species of the world*. v, 732 pp. Allen Press & Association of Systematics Collections, Lawrence, Kansas.
- Günther, A. 1858. *Catalogue of the Batrachia Salientia in the collection of the British Museum*. xvi, 160 pp., 12 pls. British Museum, London.
- Passmore, N.I. & Carruthers, V.C. 1979. *South African frogs*. xviii, 270 pp. Witwatersrand University Press, Johannesburg.
- Poynton, J.C. & Broadley, D.G. 1985. Amphibia Zambesiaca. 2. Ranidae. *Annals of the Natal Museum*, **27**: 115–135.
- Smith, A. 1849. *Illustrations of the zoology of South Africa*. Reptilia. 78 pls. and text; Appendix, 28 pp. Smith, Elder, London.
- Steindachner, F. [1867]. *Reise der österreichischen Fregatte Novara um die Erde in den Jahren 1857, 1858, 1859 unter den Befehlen des Commodore B. von Willerstorff-Urbair*. Zoologischer Theil, vol. 1. Amphibien. 70 pp., 5 pls. Kaiserlich-Königlichen Hof- und Staatsdruckerei, Wien.
- Tschudi, J.J. 1838. Classification der Batrachier, mit Berücksichtigung der fossilen Thiere dieser Abtheilung der Reptilien. *Mémoires de la Société des Sciences Naturelles de Neuchâtel*, **2**: 1–102. (Issued in the serial in [1839] but published as a separate in 1838).

- Van Dijk, D.E. 1966. Systematic and field keys to the families, genera and described species of Southern African Anuran tadpoles. *Annals of the Natal Museum*, **18**(2): 231–286.
- Van Dijk, D.E. 1971. Anuran ecology in relation particularly to oviposition and development out of water. *Zoologica Africana*, **6**(1): 119–132.
- Van Dijk, D.E. 1972. The behaviour of Southern African Anuran tadpoles with particular reference to their ecology and related external morphological features. *Zoologica Africana*, **7**(1): 49–55.
- Wager, V.A. 1986. *Frogs of South Africa*, Ed. 2. 183 pp. Delta, Graighall, South Africa.
- Waterhouse, F.H. 1880. On the dates of publication of the parts of Sir Andrew Smith's 'Illustrations of the Zoology of South Africa'. *Proceedings of the Zoological Society of London*, **1880**: 489–491.